SAMPLE SUBMISSION GUIDE

GLOBAL DISCOVERY & COMPLEX LIPIDS PANELS

Metabolon

Preparation and Shipping Procedures

Ship samples packed in 8-12 kg of dry ice* to:

Metabolon Sample Acceptance
617 Davis Drive, Suite 400
Morrisville, NC 27560

Phone: +1-919-572-1711

Ship domestic overnight Monday - Wednesday.
Ship international via World Courier, Monday or Tuesday
Note: Our receiving hours are 09:00 to 16:00 ET.

Shipment Details

A completed digital manifest is required for each shipment, and a template will be provided by your Metabolon Representative. Please include a hard copy of the completed manifest inside your sample shipment but outside of the Styrofoam container.

Prior to shipping samples, email an electronic copy of the completed sample manifest in Excel format to: samplemanager@metabolon.com. Please include your assigned project code in the subject line. Please do not ship samples until your project code has been assigned.

Remember to include a hard copy of the completed manifest with your sample shipment

Completing Your Digital Manifest:

- **Must** include the project code on the cover page and in the subject line of all email correspondence.
- **Must** include all available sample information for each sample shipped, including any preservatives used in the collection/storage process.
- **Must NOT** include personally identifying information for human samples.

* 8 kg is the recommended minimum amount of dry ice for domestic shipping.
12 kg is the recommended minimum amount of dry ice for international shipping.

Planning

- **Complying with required sample amounts and consistent handling is critical to study quality (e.g., collection technique, time of sampling, time to freezer, freeze/thaw, time of aliquoting).**
- Please notify your Metabolon Representative of any preservatives that have been used in the collection process, novel sample types, and samples containing volumes or masses outside our standard recommendations.
- The sample disposition date is 90 days post project completion. Please inform your Metabolon Representative if samples should be returned or require additional storage time.

Acceptable Sample Tubes

- The Metabolon Study Success Sample Handling Kit will provide you with Metabolon Standard Preferred 2D barcoded sample collection tubes specifically intended for your study.
- For information on other barcoded tubes that may be acceptable, please contact your Metabolon Representative.
- Scan the sample barcode into the supplied digital manifest and provide additional requested metadata. The minimum required information fields within the digital manifest include the following: “Unique Tube Label ID”, “Client Matrix”, “Sample Amount”, “Sample Amount Units” “Sample Container ID” and “Sample Container Position”.

Aliquot and Freeze

- Minimize or eliminate the time samples are in a non-frozen state.
- Transfer required volume or mass of sample into pre-labeled and pre-chilled tubes appropriate for storage at -80C.
- Freeze the sample vials in liquid nitrogen or immediately store them in a −80 °C freezer.

Collection Guidelines

Blood Samples

(Plasma, Serum, Whole blood)

Plasma:

- Collect whole blood in anti-coagulant tubes following the manufacturer's processing instructions.

  Plasma Anticoagulant Guidelines:
  - **Best results:** EDTA (K2, K3, Na; avoid Li).
  - For global metabolomics studies, avoid citrate.
  - For all studies, never include multiple anticoagulant sample types in the same experiment.

Serum:

- Collect whole blood in serum separator tubes and follow the tube manufacturer's processing instructions.

Whole blood:

- Coagulation must be prevented, preferably by the addition of EDTA.

Fecal Samples

Fecal Samples in 95% Ethanol require additional sample guidance. Please consult with your Metabolon Representative.

Frozen:

- Do not lyophilize samples unless instructed to by Metabolon.

OMNImet•GUT™ Fecal Samples:

- Gather all individual donor samples at your facility before shipping to Metabolon. We will not accept samples direct from individual donors.
- Store samples at -80°C as soon as possible.
  - Room temperature stability is validated for 4 days
  - Store at -20°C for up to 1 week if -80°C is unavailable.
- Avoid exposure to temperatures above 30°C (86°F). Provide donors with ice packs if such exposure is likely prior to arrival at your facility.
- Ship OMNImet•GUT tubes to Metabolon in their entirety. In cases where samples must be aliquoted (i.e. long-term storage, sample retention) please consult with your Metabolon Representative for additional guidelines.
- Follow standard shipping procedures (page 1) once all donor samples are gathered.

Tissue Samples

- For solid tissues (e.g., biopsy material), the amount of tissue per sample can vary depending upon study objectives and tissue type. Sample masses outside the recommended range will require additional guidelines. Please consult with your Metabolon Representative.

Cell Samples (Eukaryotic and Bacterial)

- Pellet cells, remove supernatant, and freeze at -80C.
- Provide an accurate cell count for each sample.

Plant Material

- Preferably, grind fresh plant material to a powder with a mortar and pestle under liquid nitrogen. The powdered material should be lyophilized, if possible.

Dried Blood Spot (DBS) Cards Volumetric Absorptive Microsampling (VAMS)

- We accept both DBS and VAMS formats. Please consult with your Metabolon Representative regarding the sample collection method of your study.
- Store in zip-top bags containing a silica desiccant pack. Bags can be stored together in a secondary vessel containing a humidity indicator card.
- For maximum stability, we recommend -80°C storage.
- Samples should be shipped on dry ice with a humidity indicator card and silica gel desiccant included with the shipment.

Biohazardous Materials

- **BSL2 samples require additional guidance and approval.** Please consult with your Metabolon Representative.

Complying with required sample amounts and consistent handling is critical to study quality (e.g., collection technique, time of sampling, time to freezer, freeze/thaw, time of aliquoting).

Liquid Sampling Procedure

(Blood, Urine, cell culture media, or CSF)

1. Pipet required volume per sample type as defined in the table below.
2. Immediately dispense pipetted liquid into the appropriate chilled tube, securely cap, and freeze at -80C.
3. Store samples at −80 °C until shipment.
4. Volumes outside the recommendations in the table below should be discussed with your Metabolon Representative.

Solid Sampling Procedure

(Feces, Tissue, or Plant)

1. Weigh the required mass per sample as defined in the table below. (Do not include any homogenization materials such as metal or ceramic beads, garnet, etc.)
2. Transfer weighed sample into the appropriate chilled tube, securely cap, and freeze at -80C.
3. Store samples at −80 °C until shipment.
4. Mass outside the recommendations in the below table should be discussed with your Metabolon Representative.

Specimen Type	Amount/Sample/Panel	Global Discovery Panel	Complex Lipids Targeted Panel
Blood (whole/plasma/serum)	150 µL	✓	✓
Urine	200 µL	✓	Not Advised (low lipid content)
Cerebrospinal Fluid (CSF)	150 µL	✓	Not Advised (low lipid content)
Cell Culture Media	150 µL	✓	Not Advised (low lipid content)
Cells (packed pellet)	≥100 µL (~1e07 cells)	✓	✓
Fecal (wet-frozen)	100 mg	✓	Not Accepted on CLTP
Fecal (OMNImet·Gut)	Entire OMNImet·Gut sample tube*	✓	
Tissue	30-50 mg (not to exceed 80 mg)	✓	✓
Plant Material	30-50 mg (dry) / 100 mg (wet)	✓	Approval Required
Dried Blood Spot (diameter)	8-12 mm (x5)	✓	Approval Required
Neoteryx Mitra® Devices with VAMS® Technology	20 µL tips (x4)	✓	Approval Required

*see collection guidelines

Sample Amount Requirements

- Sample amounts are per sample, per panel, and are optimized for the Global Discovery Panel and Complex Lipids Panel only. Sample amounts outside these recommendations may impact study results and require approval. Please consult with your Metabolon Representative.
- These sample volumes are recommended to ensure pooled quality control (QC) data is included in the client data table and raw spectral data deliverable. If factors such as sample volume or matrix type are not met, an alternate proprietary Metabolon QC sample will be used. However, these will not be reported in the CDT and there will be no raw spectral files.
- Additional volume or mass may be required for a longitudinal bridging matrix.

Unique Sample Types Guidance

- We welcome the opportunity to analyze novel and unique sample types! Sample types not listed in the above table will require specific guidelines and approval. Please consult with your Metabolon Representative.

In addition to our Global Discovery Panel and Complex Lipids Panel, Metabolon offers multiple Targeted Panels, Single-Analyte Assays, and Custom Targeted Panels designed for a more focused, absolute quantitation approach. Ask your Metabolon Representative if Metabolon Target is right for you!

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